

What is claimed is:

1. An isolated nucleic acid molecule encoding a human 5-HT₂ receptor.

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2. A DNA molecule of claim 1.

3. A cDNA molecule of claim 2 having a coding sequence substantially the same as the coding sequence shown
10 in Figure 2.

4. A DNA molecule of claim 2.

5. An isolated protein which is a human 5-HT₂ receptor.

6. An isolated protein having substantially the same amino acid sequence as the amino acid sequence shown
15 in Figure 2.

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7. A vector comprising the DNA molecule of
claim 2.

8. A virus comprising the DNA molecule of claim 2.

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9. A bacteriophage comprising the DNA molecule of claim
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10. A plasmid comprising the DNA molecule of claim 2.

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11. A vector comprising the cDNA molecule of claim 3.

12. A virus comprising the cDNA molecule of claim 3.

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13. A bacteriophage comprising the cDNA molecule of claim 3.

14. A plasmid comprising the cDNA molecule of claim 3.

5 15. A vector comprising the DNA molecule of claim 4.

16. A virus comprising the DNA molecule of claim 4.

10 17. A bacteriophage comprising the DNA molecule of claim 4.

18. A plasmid comprising the DNA molecule of claim 4.

19. The plasmid of claim 14 designated clone 6B.

15 20. A plasmid adapted for expression in a bacterial cell which comprises the DNA molecule of claim 2 and the regulatory elements necessary for expression of the DNA in the bacterial cell.

20 21. A plasmid adapted for expression in a bacterial cell which comprises the cDNA molecule of claim 3 and the regulatory elements necessary for expression of the cDNA in the bacterial cell.

25 22. A plasmid adapted for expression in a bacterial cell which comprises the DNA molecule of claim 4 and the regulatory elements necessary for expression of the DNA in the bacterial cell.

30 23. A plasmid adapted for expression in a yeast cell which comprises the DNA molecule of claim 2 and the regulatory elements necessary for expression of the DNA in the yeast cell.

24. A plasmid adapted for expression in a yeast cell which comprises the cDNA molecule of claim 3 and the regulatory elements necessary for expression of the cDNA in the yeast cell.

5 25. A plasmid adapted for expression in a yeast cell which comprises the DNA molecule of claim 4 and the regulatory elements necessary for expression of the DNA in the yeast cell.

10 26. A plasmid adapted for expression in a mammalian cell which comprises the DNA molecule of claim 2 and the regulatory elements necessary for expression of the DNA in the mammalian cell.

15 27. A plasmid adapted for expression in a mammalian cell which comprises the cDNA molecule of claim 3 and the regulatory elements necessary for expression of the cDNA in the mammalian cell.

20 28. A plasmid adapted for expression in a mammalian cell which comprises the DNA molecule of claim 4 and the regulatory elements necessary for expression of the DNA in the mammalian cell.

25 29. The plasmid of claim 27 designated pMO5-6B and deposited under ATCC Accession No. .

30. A mammalian cell comprising the DNA molecule of claim 2.

30 31. A mammalian cell comprising the cDNA molecule of claim 3.

32. A mammalian cell comprising the DNA molecule of claim 4.

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33. A mammalian cell comprising the plasmid of claim 26.

34. A mammalian cell comprising the plasmid of claim 27.

5 35. A mammalian cell comprising the plasmid of claim 28.

36. A transfected Ltk⁺ cell comprising the plasmid of claim 26.

10 37. A transfected Ltk⁺ cell comprising the plasmid of claim 27.

38. A transfected Ltk⁺ cell comprising the plasmid of claim 28.

15 39. The transfected Ltk⁺ cell of claim 37 designated L-NGC-5HT₂ and deposited under ATCC Accession No.

20 40. A method for determining whether a ligand which is not known to be capable of binding to the 5-HT₂ receptor can bind to the 5-HT₂ receptor which comprises contacting a mammalian cell of claim 33 with the ligand under conditions permitting binding of ligands known to bind to the 5-HT₂ receptor, detecting the presence of any of the ligand bound to the 5-HT₂ receptor and thereby determining whether the ligand binds to the 5-HT₂ receptor.

25 41. A method for determining whether a ligand which is not known to be capable of binding to the 5-HT₂ receptor can bind to the 5-HT₂ receptor which comprises contacting a mammalian cell of claim 34 with the ligand under conditions permitting binding of ligands known to bind to the 5-HT₂ receptor, detecting the presence of any of the ligand bound

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to the 5-HT₂ receptor and thereby determining whether the ligand binds to the 5-HT₂ receptor.

42. A method for determining whether a ligand which is not known to be capable of binding to the 5-HT₂ receptor can bind to the 5-HT₂ receptor which comprises contacting a mammalian cell of claim 35 with the ligand under conditions permitting binding of ligands known to bind to the 5-HT₂ receptor, detecting the presence of any of the ligand bound to the 5-HT₂ receptor and thereby determining whether the ligand binds to the 5-HT₂ receptor.

43. A method of claim 41, wherein the mammalian cell is Ltk⁻.

44. A method of detecting the presence of mRNA coding for the 5-HT₂ receptor in a cell which comprises obtaining total mRNA from the cell and contacting the mRNA so obtained with the cDNA molecule of claim 3 under hybridizing conditions, detecting the presence of mRNA hybridized to the cDNA molecule, and thereby detecting the presence of mRNA encoding the 5-HT₂ receptor in the cell.

45. A DNA probe useful for detecting nucleic acid encoding the 5-HT₂ receptor comprising a nucleic acid molecule of at least about 15 nucleotides having a sequence complementary to a coding sequence included within the sequence shown in Figure 2.

46. An antibody directed to the human 5-HT₂ receptor.

47. A monoclonal antibody directed to an epitope of the 5-HT₂ receptor present on the surface of a cell and

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having an amino acid sequence substantially the same as any part of the amino acid sequence shown in Figure 2.

48. A method of detecting the presence of the 5-HT₂ receptor on the surface of a cell which comprises contacting the cell with a monoclonal antibody of claim 47 under conditions permitting binding of the monoclonal antibody to the receptor, detecting the presence of the monoclonal antibody bound to the cell, and thereby the presence of the 5-HT₂ receptor on the surface of the cell.

49. A method of screening drugs to identify drugs which specifically interact with, and bind to, the 5-HT₂ receptor on the surface of a cell which comprises contacting the mammalian cell of claim 33 with a plurality of drugs, determining those drugs which bind to the mammalian cell, and thereby identifying drugs which specifically interact with, and bind to, the 5-HT₂ receptor.

50. A method of screening drugs to identify drugs which specifically interact with, and bind to, the 5-HT₂ receptor on the surface of a cell which comprises contacting the mammalian cell of claim 34 with a plurality of drugs, determining those drugs which bind to the mammalian cell, and thereby identifying drugs which specifically interact with, and bind to, the 5-HT₂ receptor.

51. A method of screening drugs to identify drugs which specifically interact with, and bind to, the 5-HT₂ receptor on the surface of a cell which comprises contacting the mammalian cell of claim 35 with a plurality of drugs, determining those drugs which

bind to the mammalian cell, and thereby identifying drugs which specifically interact with, and bind to, the 5-HT2 receptor.

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